

AMENDMENTS TO THE CLAIMS

Please cancel Claim 2; amend Claims 1, 3-6, 9 and 10; and, add new Claims 13-17 as follows.

LISTING OF CLAIMS

1. (currently amended) A compressor control system for an air conditioner of a vehicle, the vehicle includes:

a driving electric motor for driving the vehicle;

a main battery for supplying electric power of a high voltage to the driving electric motor; and

a driving electronic control unit which has at least one of a function for controlling operation of an electric actuator driven when being applied with the high voltage of the main battery, a function for controlling a drive-power switching of the vehicle between the driving electric motor and an engine of the vehicle and a function for controlling a charge and a discharge of the main battery, the compressor control system comprising:

a compressor which is provided in a refrigerant cycle of the air conditioner for performing air-conditioning in a vehicle compartment; [[and]]

a compressor electric motor for driving the compressor, wherein the compressor electric motor has a rotation speed that is controlled by the driving electronic control unit;

an air-conditioning electronic control unit to which an air-conditioning signal relevant to the air-conditioning is inputted, and

a compressor inverter which converts the high voltage from a direct current source to AC voltage with an adjusted frequency or voltage value, and applies the adjusted AC voltage to the compressor electric motor; wherein

the air-conditioning electronic control unit controls operation of the air conditioner based on the air-conditioning signal;

the air-conditioning electronic control unit is provided to communicate with the driving electronic control unit;

the driving electronic control unit controls the rotation speed of the compressor electric motor through the compressor inverter;

the air-conditioning electronic control unit calculates a target rotation speed of the compressor electric motor based on the air-conditioning signal, and outputs the calculated target rotation speed to the driving electronic control unit; and

the driving electronic control unit is provided with an output circuit that is capable of converting the target rotation speed input from the air-conditioning electronic control unit to a driving signal for processing the compressor inverter, and output the driving signal converted via the output circuit to the compressor inverter.

2. (cancelled)

3. (currently amended) The compressor control system according to claim [[2]] 1, wherein the air-conditioning electronic control unit communicates with the driving electronic control unit through a local area network of the vehicle.

4. (currently amended) The compressor control system according to claim [[2]] 1, wherein

the air-conditioning electronic control unit has at least one of a function for calculating a target temperature of conditioned air blown into the passenger compartment, a function for determining a blowing amount of the conditioned air, a function for determining an air-outlet mode of the conditioned air and a function for determining an air-suction mode.

5. (currently amended) The compressor control system according to claim [[2]] 1, wherein:

the air-conditioning electronic control unit calculates a target rotation speed of the compressor electric motor based on the air-conditioning signal and outputs a signal representing the target rotation speed to the driving electronic control unit; and

the driving electronic control unit controls the rotation speed of the compressor electric motor based on the signal representing the target rotation speed.

6. (currently amended) ~~The compressor control system according to claim 1,~~
A compressor control system for an air conditioner of a vehicle, the vehicle includes:

a driving electric motor for driving the vehicle;

a main battery for supplying electric power of a high voltage to the driving electric motor; and

a driving electronic control unit which has at least one of a function for controlling operation of an electric actuator driven when being applied with the high

voltage of the main battery, a function for controlling a drive-power switching of the vehicle between the driving electric motor and an engine of the vehicle and a function for controlling a charge and a discharge of the main battery, the compressor control system comprising:

a compressor which is provided in a refrigerant cycle of the air conditioner for performing air-conditioning in a vehicle compartment; and

a compressor electric motor for driving the compressor, wherein the compressor electric motor has a rotation speed that is controlled by the driving electronic control unit; wherein the driving electronic control unit includes

a determining means[[,]] for determining whether a vehicle condition is in a restriction condition where the rotation speed of the compressor needs to be restricted.

7. (original) The compressor control system according to claim 6, wherein the restriction condition is at least one of an overloading state of a vehicle running load and an over-discharging state of the main battery.

8. (original) The compressor control system according to claim 1, further comprising

a compressor inverter which is connected to a direct-current power source, and generates alternating-current voltage from an output of the direct-current power source to apply the alternating-current voltage to the compressor electric motor,

wherein the driving electronic control unit controls the rotation speed of the compressor electric motor through the compressor inverter.

9. (currently amended) ~~The compressor control system according to claim 8,~~
wherein: A compressor control system for an air conditioner of a vehicle, the vehicle
includes:

a driving electric motor for driving the vehicle;

a main battery for supplying electric power of a high voltage to the driving
electric motor; and

a driving electronic control unit which has at least one of a function for
controlling operation of an electric actuator driven when being applied with the high
voltage of the main battery, a function for controlling a drive-power switching of the
vehicle between the driving electric motor and an engine of the vehicle and a function
for controlling a charge and a discharge of the main battery, the compressor control
system comprising:

a compressor which is provided in a refrigerant cycle of the air conditioner
for performing air-conditioning in a vehicle compartment;

a compressor electric motor for driving the compressor, wherein the
compressor electric motor has a rotation speed that is controlled by the driving
electronic control unit;

a compressor inverter which is connected to a direct-current power
source, and generates alternating-current voltage from an output of the direct-current
power source to apply the alternating-current voltage to the compressor electric motor;

wherein

the driving electronic control unit controls the rotation speed of the compressor electric motor through the compressor inverter;

the compressor inverter outputs a feedback signal to the driving electronic control unit; and

the driving electronic control unit controls the rotation speed of the compressor electric motor based on the feedback signal.

10. (currently amended) A vehicle comprising:

a driving electric motor for driving the vehicle;

a main battery for supplying electric power of a high voltage to the driving electric motor;

a driving electronic control unit which has at least one of a function for controlling operation of an electric actuator driven when being applied with the high voltage of the main battery, a function for controlling a drive-power switching of the vehicle between the driving electric motor and an engine of the vehicle and a function for controlling a charge and a discharge of the main battery; and

an air conditioner for performing air-conditioning in a vehicle compartment, wherein:

the air conditioner includes a refrigerant cycle including a compressor for compressing refrigerant, and a compressor electric motor for driving the compressor;

[[and]]

the driving electronic control unit controls a rotation speed of the compressor electric motor; and

the driving electronic control unit includes means for determining whether a vehicle condition is in a restriction condition where the rotation speed of the compressor needs to be restricted.

11. (original) The vehicle according to claim 10, further comprising
an air-conditioning electronic control unit to which an air-conditioning signal relevant to the air-conditioning is inputted, wherein:

the air-conditioning electronic control unit controls operation of the air conditioner based on the air-conditioning signal; and

the air-conditioning electronic control unit is provided to communicate with the driving electronic control unit.

12. (original) The vehicle according to claim 11, wherein:

the air-conditioning electronic control unit calculates a target rotation speed of the compressor electric motor based on the air-conditioning signal and outputs a signal representing the target rotation speed to the driving electronic control unit; and

the driving electronic control unit controls the rotation speed of the compressor electric motor based on the signal representing the target rotation speed.

13. (new) The compressor control system according to claim 6, further comprising

an air-conditioning electronic control unit to which an air-conditioning signal relevant to the air-conditioning is inputted; and

the air-conditioning electronic control unit controls operation of the air conditioner based on the air-conditioning signal;

the air-conditioning electronic control unit is provided to communicate with the driving electronic control unit.

14. (new) The compressor control system according to claim 13, wherein the air-conditioning electronic control unit communicates with the driving electronic control unit through a local area network of the vehicle.

15. (new) The compressor control system according to claim 13, wherein the air-conditioning electronic control unit has at least one of a function for calculating a target temperature of conditioned air blown into the passenger compartment, a function for determining a blowing amount of the conditioned air, a function for determining an air-outlet mode of the conditioned air and a function for determining an air-suction mode.

16. (new) The compressor control system according to claim 13, wherein:
the air-conditioning electronic control unit calculates a target rotation speed of the compressor electric motor based on the air-conditioning signal and outputs a signal representing the target rotation speed to the driving electronic control unit; and
the driving electronic control unit controls the rotation speed of the compressor electric motor based on the signal representing the target rotation speed.

17. (new) The compressor control system according to claim 6, further comprising

a compressor inverter which is connected to a direct-current power source, and generates alternating-current voltage from an output of the direct-current power source to apply the alternating-current voltage to the compressor electric motor,

wherein the driving electronic control unit controls the rotation speed of the compressor electric motor through the compressor inverter.